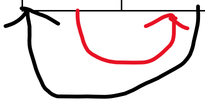
Q1] A) Illustrade sorting via insertion sort on the array A[19,5,9,52,26,35,61,28]

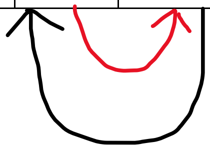
i. J=2

1	2	3	4	5	6	7	8
`19	5	9	52	26	35	61	28



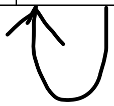
ii. J=3

1	2	3	4	5	6	7	8
5	19	9	52	26	35	61	28



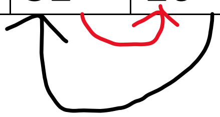
iii. J=4

1	2	3	4	5	6	7	8
5	9	19	52	26	35	61	28



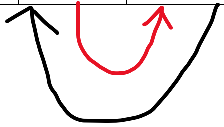
iv. J=5

1	2	3	4	5	6	7	8
5 ·	9	19	52	26	35	61	28



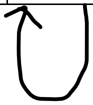
v. J=6

1	2	3	4	5	6	7	8
5	9	19	26	52	35	61	28



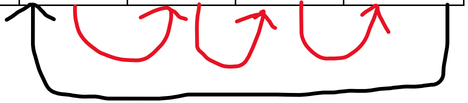
vi. J=7

1	2	3	4	5	6	7	8
5	9	19	26	35	52	61	28



vii. J=8

1	2	3	4	5	6	7	8
5	9	19	26	35	52	61	28

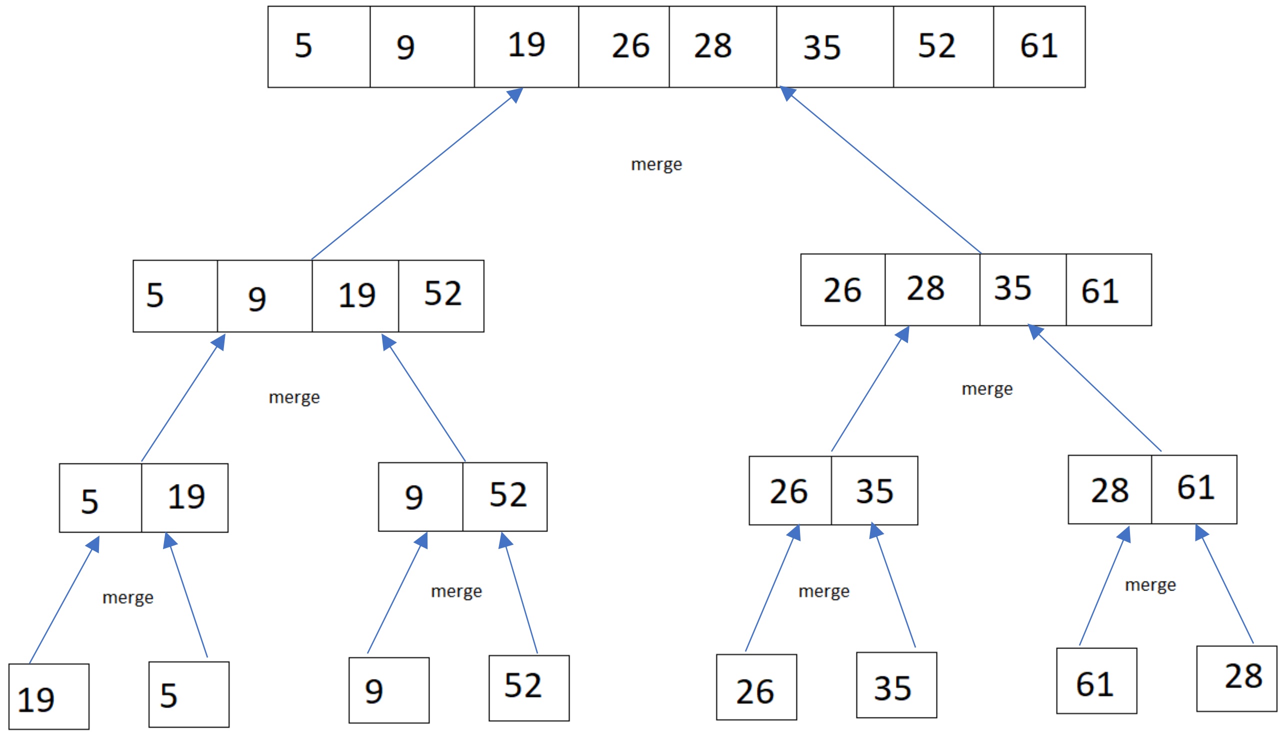


viii. Final Sorted Array

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
5	**9**	**19**	**26**	**28**	**35**	**52**	**61**

Q1. B]

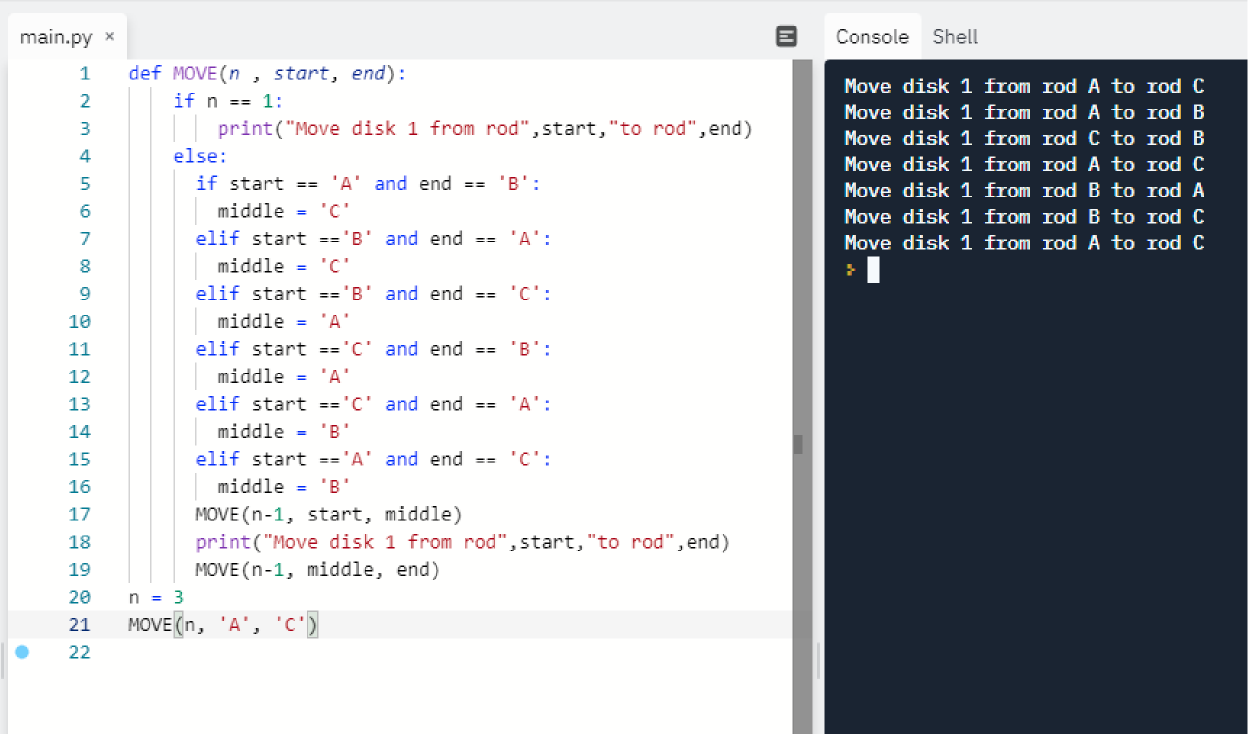
Illustrate sorting via merge sort on the array A[19,5,9,52,26,35,61,28]



Q4] Tower of Hanoi Pseudo Code

```
MOVE(n, start,end):
    If  n == 1 :
        print("Move the top disk from rod", start, "to rod", end)
    else:
        middle = third rod        ……  // calculate from start and end rod
        MOVE(n-1, start, middle)
        Print("Move the top disk from rod", start, "to rod", end)
        MOVE(n-1, middle, end)
```

Following is a screenshot of the code implemented from the above pseudo code for reference:



```python
def MOVE(n , start, end):
    if n == 1:
        print("Move disk 1 from rod",start,"to rod",end)
    else:
        if start == 'A' and end == 'B':
            middle = 'C'
        elif start =='B' and end == 'A':
            middle = 'C'
        elif start =='B' and end == 'C':
            middle = 'A'
        elif start =='C' and end == 'B':
            middle = 'A'
        elif start =='C' and end == 'A':
            middle = 'B'
        elif start =='A' and end == 'C':
            middle = 'B'
        MOVE(n-1, start, middle)
        print("Move disk 1 from rod",start,"to rod",end)
        MOVE(n-1, middle, end)
n = 3
MOVE(n, 'A', 'C')
```

```
Move disk 1 from rod A to rod C
Move disk 1 from rod A to rod B
Move disk 1 from rod C to rod B
Move disk 1 from rod A to rod C
Move disk 1 from rod B to rod A
Move disk 1 from rod B to rod C
Move disk 1 from rod A to rod C
›
```